FITNESS FOR SERVICE (FFS) ASSESSMENTS

Evaluating operating capacity of flawed or damaged equipment.

In-service equipment that is flawed or has a defect does not necessarily mean that the equipment needs to be replaced or repaired. Equipment can continue in service despite small flaws. However, once a flaw is detected it is the responsibility of the organisation to prove the equipment's structural integrity before continuing service. Failure to do so can lead to equipment failure, which could result in injury, loss of life, and severe financial and reputational consequences.

Fitness for service studies assess the service capacity of damaged equipment and systems. It provides a structured and well defined approach that helps an organisation to distinguish between benign and dangerous equipment flaws. The assessment identifies flaws and damage mechanisms by evaluating the original design and fabrication practices, material, service history and environmental conditions and involves:

- Assessing the flaw in detail and calculating the flaw's critical size;
- Calculating the estimated remaining life of the equipment to establish an inspection interval;
- Recommending techniques to remedy the flaw or to eliminate/control the damage mechanism; and
- Recommending techniques to monitor the flaw or deterioration mechanism while the asset is in service.

In general, the API RP 579 code is used to evaluate the structural integrity of an asset that contains a flaw or damage.

Key benefits

- The greatest benefit of a fitness for service assessment is that the equipment can be kept in-service with the flaw, if the flaw is classified as benign;
- The remaining life assessment gives the organisation better inspection intervals and the ability to plan for the future replacement of the asset;
- Fitness for service assessments give a solid basis for evaluating what actions should be taken.

Related services

- In-service inspection
- Certification of management systems
- Risk-based Inspection
- Design review and certification of assets
- Technical audits
- Training
- Risk analysis
- On site metallurgical analyses
- Metallic material testing
- Plastic and composite materials testing
- Non-destructive testing
- Risk-based inspection (RBI)